



**(19) World Intellectual Property Organization  
International Bureau**

(43) International Publication Date  
24 June 2004 (24.06.2004)

PCT

(10) International Publication Number  
**WO 2004/053524 A3**

**(51) International Patent Classification<sup>7</sup>:**

G08B 13/26

(81) **Designated States (national):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

**(21) International Application Number:**

PCT/US2003/039235

**(22) International Filing Date:**

10 December 2003 (10.12.2003)

**(25) Filing Language:**

## English

**(26) Publication Language:**

## English

**(30) Priority Data:**

60/432,150 10 December 2002 (10.12.2002) US

(84) **Designated States (regional):** ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

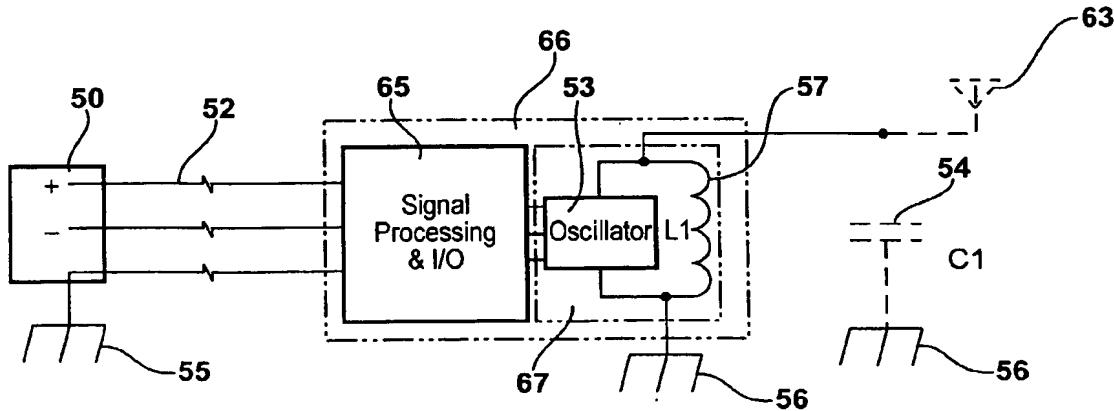
**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

**(88) Date of publication of the international search report:**  
5 August 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: METHOD OF STEERING CAPACITOR FIELDS FOR USE IN CAPACITIVE SENSING SECURITY SYSTEMS



WO 2004/053524 A3

**(57) Abstract:** The present invention provides a capacitive sensing apparatus (10) having utility in object detection security applications whereby the object detection field (160) generated by the apparatus is made steerable. The apparatus includes a power source (76) having a ground connection (77) in communication with at least one sensing circuit (82) operative to detect an object (84) moving within the sensing field. At least one conductive element (75) is provided in communication with electrical ground. To steer the direction of the sensing field, the relative position and distance between the conductive element and the sensing circuit is adjusted such that a desired sensing field pattern is obtained.

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US03/39235

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : G08B 13/26  
US CL : 340/562, 540, 541, 545.1; 324/76.52, 76.53, 686

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 340/562, 540, 541, 545.1; 324/76.52, 76.53, 686

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,E	US 6,731,209 B2 (WADLOW et al.) 04 MAY 2004 (04.05.2004), see entire document.	1-17
Y	US 5,442,347 A (VRANISH) 15 AUGUST 1995 (15.08.1995), see entire document.	1-17
Y	US 5,952,835 A (COVELEY) 14 SEPTEMBER 1999 (14.09.1999), see entire document.	1-17

<input type="checkbox"/>	Further documents are listed in the continuation of Box C.	<input type="checkbox"/>	See patent family annex.
*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

01 June 2004 (01.06.2004)

Date of mailing of the international search report

18 JUN 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Daniel J. Wu

Telephone No. (703) 505-4700